Claims

1. A process for preparing lithium transition metallates of the general formula

$$Li_x(M^1_yM^2_{1-y})_nO_{nz},$$

wherein

M^1 represents nickel, cobalt or manganese,

M^2 represents chromium, cobalt, iron, manganese, molybdenum or aluminium and is not identical to M^1,

n is 2 if M^1 is manganese, otherwise 1,

x is a number between 0.9 and 1.2,

y is a number between 0.5 and 1.0 and

z is a number between 1.9 and 2.1,

by calcining an intimate mixture of oxygen-containing transition metal compounds and an oxygen-containing lithium compound, which has been obtained by treating a solid powdered transition metal compound with a solution of the lithium compound and drying, characterised in that at least the M^1 compound is used in the form of a powder with a specific surface area of at least 20 m^2/g (BET) and calcination is performed in a moving bed.

2. A process according to Claim 1, characterised in that the transition metallate is milled and sieved after calcination and the finer fraction from sieving is recycled to the moving bed.

3. A process according to Claim 1 or 2, characterised in that a mixed transition metal compound which contains at least some of the M^2 compound is used as the M^1 compound.

4. A process according to one of Claims 1 to 3, characterised in that the solution of lithium compound contains at least some of the M^2 compound.

5. A process according to one of Claims 1 to 4, characterised in that calcination is performed in a rotary kiln, in a fluidised bed or in a fall-shaft reactor (downer).

6. A process according to one of Claims 1 to 5, characterised in that following calcination, milling is performed and, after milling, further calcination is performed in an oxygen-containing atmosphere.

7. A process according to one of Claims 1 to 6, characterised in that $LiNO_3$ is used as the lithium compound and $Ni(OH)_2$ is used as the M^1 transition metal compound.

8. A process according to Claim 7, characterised in that the NO_2 released during calcination is recovered as nitric acid and is reacted with LiOH to give $LiNO_3$ which is used as the lithium compound.

9. A process according to one of Claims 1 to 8, characterised in that the transition metal compound treated with the solution of a lithium compound is dried by spray drying or mixer granulation.